



Europäisches Patentamt

European Patent Office

Office européen des brevets



(11) **EP 0 820 786 A3** 

(12)

### **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3: 12.05.1999 Bulletin 1999/19

(51) Int Cl.6: A61N 5/06

(43) Date of publication A2: 28.01.1998 Bulletin 1998/05

(21) Application number: 97305542.9

(22) Date of filing: 24.07.1997

(84) Designated Contracting States:

AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC

NL PT SE

(30) Priority: 25.07.1996 US 690330

(71) Applicant: Cordis Corporation
Miami Lakes Florida 33014 (US)

(72) Inventor: Leone, James E. Miami, Florida 33156 (US)

(74) Representative: Mercer, Christopher Paul Carpmaels & Ransford 43, Bloomsbury Square London WC1A 2RA (GB)

#### (54) Photodynamic therapy balloon catheter with microporous membrane

(57) A photodynamic therapy balloon catheter with microporous membrane is provided which has an elongated optical fiber, an inner tubular member, a porous balloon member surrounding the inner tubular member, and fluid material provided between the inner tubular member and the porous balloon member. The porous balloon member having a plurality of holes of a size to permit medication delivered through a lumen to pass

outwardly through the holes. The balloon carries on an outer surface a substantially hydrophilic, tubular microporous membrane covering the holes, to break up streams of flowing medication. Light-reflective material is included in any one or a plurality of the inner member, fluid material, porous balloon member, and microporous membrane in any combination to provide a uniform light illumination for activating treatment fluids located on an elongated treatment site within a living body.

# EP 0 820 786 A3



# **EUROPEAN SEARCH REPORT**

Application Number EP 97 30 5542

Category	Citation of document with in of relevant passa		Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.CI.6)
Α	6 December 1994	- column 2, line 8 *	1	A61N5/06 A61M29/02
Α	US 5 318 531 A (LEOF + the whole document	HE JAMES E) 7 June 1994	1,9,10	
Α	US 5 303 324 A (LUNI 12 April 1994 * the whole document		1,2,4	
A	US 5 514 669 A (SELM 7 May 1996 * column 7, line 47 * column 7, line 61	·	1,3	
A	WO 95 05866 A (CORT) 2 March 1995 * page 2, line 31 - * page 21, line 9 -	page 4, line 16 *	1	TECHNICAL FIELOS SEARCHED (Int.Cl.6)
A	US 5 054 867 A (WAGN 8 October 1991 * the whole document		8	A61N A61M
	The present search report has b	een drawn up for all claims		
	Place of search	Date of completion of the search		Examiner
X : part Y : part doc: A : tech	THE HAGUE  ATEGORY OF CITED DOCUMENTS  iticularly relevant if taken alone iticularly relevant if combined with anoth itiment of the same category involgical background involgical background	£ : document cited fo	underlying the sument, but public an the application of other reasons	ished on, of

EPO FORM 1503 03/R2 (P04C01)

### EP 0 820 786 A3

#### ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 97 30 5542

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

25-03-1999

Patent document cited in search report		Publication Patent tamity date Patents			Publication date	
US	5370608	A	06-12-1994	US	5417653 A	23-05-199
US	5318531	Α	07-06-1994	US US	5213576 Λ 5405472 A	25-05-199 11-04-199
U\$	5303324	Α	12-04-1994	NONE		********
US	5514669	Α	07-05-1996	AU AU CA EP JP WO	684822 B 7549994 A 2168575 A 0721312 A 9502904 T 9508949 A	08-01-199 18-04-199 06-04-199 17-07-199 25-03-199 06-04-199
WO	9505866	Α	02-03-1995	US AU	5498238 A 7673694 A	12-03-199 21-03-199
บร	5054867	A	08-10-1991	AT CA DE DK EP ES JP RU	117213 T 2033670 A 59008307 D 437181 T 0437181 A 2067013 T 4297280 A 2013098 C	15-02-199 10-07-199 02-03-199 20-03-199 17-07-199 16-03-199 21-10-199 30-05-199

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

THIS PAGE BLANK (USPTO)